Scientific American.

THE ADVOCATE OF INDUSTRY, AND JOURNAL OF SCIENTIFIC, MECHANICAL AND OTHER IMPROVEMENTS.

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THE
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Poetry.

VERDICT OF THE POOR.

Sits a maid upon a stone,
Singing slow in under-tone :
Comes a man across a moor,—
He is old, and lame, and poor.

"Riches are a glorious boon,
As is aught beneath the moon,"
Thus the maid upon the stone,
Singeth slow in under-tone.

"Not for hoarding daily care
Dwells where hoarded riches are ;
Not for wasting—sinful deed
Squanders what the wretched need.

"But for giving—God above
Gives to all men in his love :
Hoard or squander—desperate sin
Thy sad heart hath drunken in.

Came the man across the moor—
He is old and lame, and poor:
And the maid upon the stone,
Spake him thus, in under-tone:

"Here is gold—the wretched feel
Miseries which the rich can heal,"
But abashed, he hangs his head,
Asking not another's bread.

"Heaven hath daughters—daughters three
And one's name is charity ;
She is fair, but more I prize
Her sister of the bandaged eyes,

"Mercy treads with glorious feet ;"
Thus he makes her answer meet—
"She is fair, but more I prize,
Her sister of the bandaged eyes.

"Industry will up and strive,
Idleness will never thrive ;
Sluggard heart will lose its shame,
Begging alms in holy name,

Justice for the young and old—
Give them that—not rich men's gold ;
Age has won its right to rest,
Honest work is young man's quest.

"Justice, and no man is poor,
Though another owneth more,"
Thus the old man made reply,
Taking naught of charity.

LOOK UP.

BY JULIEN CRAMER.

When the sun of life is brightest,
And the heart is fresh and free,
Then look up, with meek thanksgiving,
Unto him that blesseth thee.

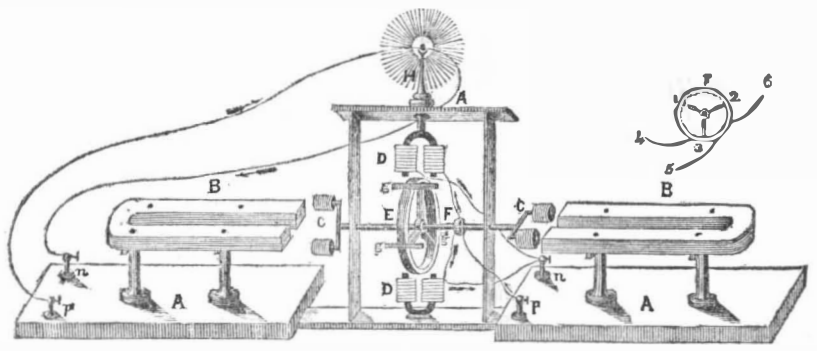
When the sea of sorrow riseth,
And its surges o'er thee roll,
Still look up—for He who rules them
Will not drown the struggling soul.

If affliction grasps thee rudely,
And presents the rack and cup,
Drink the draught and brave the toast—
Even in despair look up !

Still look up ! for one there liveth
With the will and power to save,
One who knows each human sorrow,
From the cradle to the grave.

MAGNETO ELECTRIC LIGHT.

FIGURE 1. FIGURE 2.



It is a well known fact, that there exists an intimate relationship between light and electricity. Various plans have been introduced to make the former available to common purposes by means oft he latter. As yet however, no scheme or invention of electric application has been able to supersede, for economy, either gas, or oil. Although this is true so far as past experience has been revealed to us, we are not so sceptical as to be entirely doubtful of some successful application of a cheap Drummond light, and there is no invention or improvement that would benefit our country more, than one which would reduce the cost of illumination fifty or twenty five per cent, below its present value and therefore we are sincerely desirous of encouraging experiments, in this department of science.

The above cut is a representation of a plan proposed by Mr. W. S. Thomas, of Norwich, Connecticut, for electric illumination and his description explains the principle of his invention.

Description.—A A A, represent the frame work. B B, electric magnets ; D D, artificial magnets ; E, brass wheel with 8 armatures attached to its circumference G G G. F, represents the break-piece attached to the shaft. Fig. 2, represents a side view of the break-piece. 1, 2, 3 are strips of copper, diaconnected as shown in the drawing. 4, 5, 6, are wires, the 4th is connected with the upper magnet, the 5th to the lower magnet, the 6th to the machine.

You perceive the break-piece is so arranged that the wire from the machine and the one from the lower or upper magnet is on one piece of copper constantly, charging the artificial magnets alternately, thus causing the wheel E, which is firmly attached to the shaft, to revolve with the break-piece and the armatures C C, generating electricity at both electro magnets. That which is generated at one is for the production of motion, the other we can apply to telegraphic purposes, for the production of electric light, or what we please. P P, are the positive, N N, the negative poles. The arrows show the direction of the current. H, is a standard, with a platina fork, containing a piece of carbon ; the positive and negative poles being placed in contact on the carbon constitute the magneto electric light.

Scientific Discovery.

A correspondent of the Literary Gazette, writing from Brussels, announces, that, Father Maces, Professor of Natural History in the College of La Paix, at Nemour, has just made a discovery of great scientific importance.—Guided by his theory of electricity the first imitation of which is found in a notice printed in the bulletins of the Royal Academy No. 4, he has, it is asserted, succeeded in transforming the solar light into electricity. His apparatus, which is extremely simple, spoke several times under the influence of the light, and remained mute without that influence, all the other circumstances remaining the same. Even when one witnesses the phenomenon, one scarcely ventures to trust one's own eyes, yet the indications of electricity are evident."

Remarkable Woman.

A Miss Eleanor Jones recently died in the city of Utica, who during her life lived, it is said, upon twenty five cents per week for personal expenses. She was always miserably clad, slept on a few bundles of straw, and caught cold by cleaning a cistern a few days before she died. Yet she made a donation of $106 to one of the Welch churches in that city and left property to the amount of $2000 to be distributed to different Welsh associations in that city, excepting $200 to her father in Wales, if he be living. It would have been well to have sent it to her father before and a little more than the $200.

Formation of Coal.

The Richmond Va. Enquirer notices the interesting circumstance of the conversion of wood into coal it may be said, under the eye of an observer. In the excavations, some time since, on Council Chamber Hill, a large piece of wood in a state of decay, was dug up, It was very soft, yet the bark and textures, and the perforations of worms were entirely distinct. It was presented to the Medical College, and while lying upon the table in the cabinet of the institution, it has been converted by a natural process, into coal. It gradually became hard, unyielding, and brittle, having a "fracture" and lustre like that of coal. It cannot be easily distinguished from the ordinary coal of our mines, and burns with a brillian flame like the famous cannel coal. This is, indeed, an interesting fact for the savans.

Great Projects.

Three of the greatest projects in contemplation at present, are, a canal across the Isthmus of Darien: another across the Isthmus of Suez, connecting the waters of the Mediterranean with those of the Red Sea ; and the third, a railroad from Lake Michigan to the Pacific Ocean. The completion of either of these would constitute an important era in the history of trade and commerce.

Fire and Smoke.

A wet silk handkerchief, tied without folding over the face, it is said, is a complete security against suffocation and smoke: it permits free breathing, and at the same time precludes the smoke from the lungs. It has been effectually tried.

American Ole Bull.

A young American, named Howard of New Hampshire, is giving concerts upon the violin, upon which he is said to excell any artist of the age. The Boston Mail thinks it unfortunate that he happens to be an American, as a majority of our critics can find merits in no one who was not born across the water.

RAIL ROAD NEWS.

Cairo and the Great Central Railroad. For Illinois.

We notice by the western papers that the site of Cairo City, with all improvements thereon, which cost an English company millions of money, has recently been passed into the possession of a new Association, together with the charter of the central Railroad, commencing at that city and running through the centre of the State to the Illinois and Michigan canal, and thence to the Lakes and Galena, upon the construction of which the State expended more than a million of dollars Those great and important works, it seems, are to be completed and carried out together. If so, we venture to predict that they will prove the most profitable investment of capital in this country. Cairo is protected by levees and embankments raised above the highest known floods It is at the head waters of navigation for the largest class of steamers at all seasons of the year.

Salem and Lowell Road.

It is said that the project of a railroad from Salem, through South Reading to Lowell, is again to be presented to the Legislature, with the united consent of all those on the line of the road in its favor. The road proposed is particularly desired by the people of Essex, not only for facilities it will afford in going to Lowell and the whole interior country, but also of or the superior convenience it will afford in going to and from the city of Boston, without the intervention of a ferry

Massachusetts and Troy Road.

Citizens of Conway, Sunderland and Whately, have had a meeting in favor of a railroad connecting the Vermont and Massachusetts road, through Adams, with Troy. The route proposed passes south of Sugar Loaf Mountain, up the Deerfield river to the mouth of South river, thence up South river, through Conway and Ashfield to Savoy, thence through Adams to Troy.

Another Railroad to Buffalo.

The Toronto Globe says "an application will be made at the next session of the Legislature for an Act to incorporate a Company to construct a railroad, from the town of Brantford to the shores of the Niagara River, opposite to Buffalo under the name and style of the Buffalo and Brantford Railroad Company.

The New Telegraph Line.

A large number of Telegraphic posts have been set between Newark and New Brunswick The posts are shorter, by four or five feet, than those at present in use, and are set nearly as thick again. The company it is said are going to use House's printing machine at the two extremities.

The Magnetic Telegraph is rapidly extending itself in England. The Commercial Electric Telegraph is about being opened at sixty principal towns in England, from each of which messages will be detached to every other town in connection.

Enormous Suspension-Bridge.

The Pesth suspension-bridge, over the Danube, designed by Mr. Tierney Clarke, and now nearly completed, is 12000 feet long, in three spans; the centre span being 600 feet the side spans 300 feet each. The chains are being made in England, the granite for the pier was brought in immense blocks, some of them from twelve to sixteen tons weight each, from Linz, in upper Austria. The contractor for the cofferdams, &c., was an Englishman, as were the principle workmen, and all the machinery has been supplied from England. The total cost of the bridge, as we understand, will be £600,000.

The corporation of Harvard University have passed a vote closing the observatory in Cambridge to the public on Saturday evenings.

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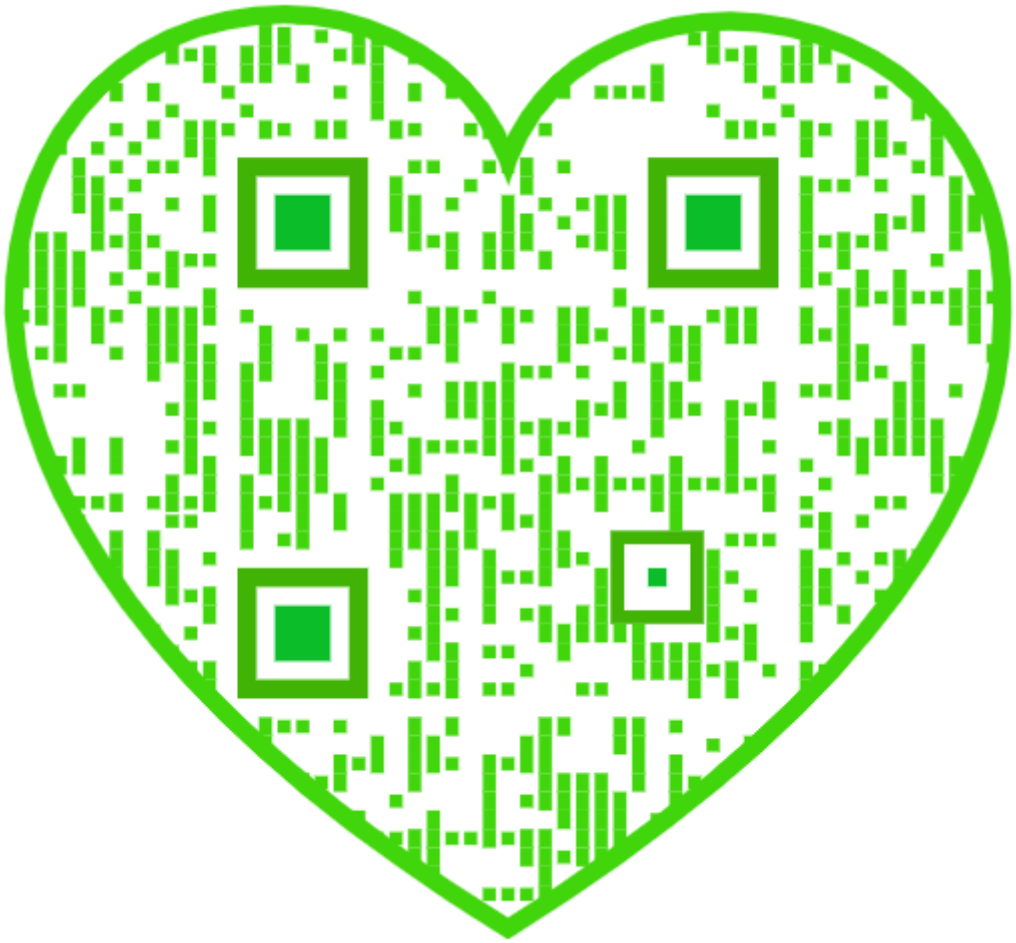

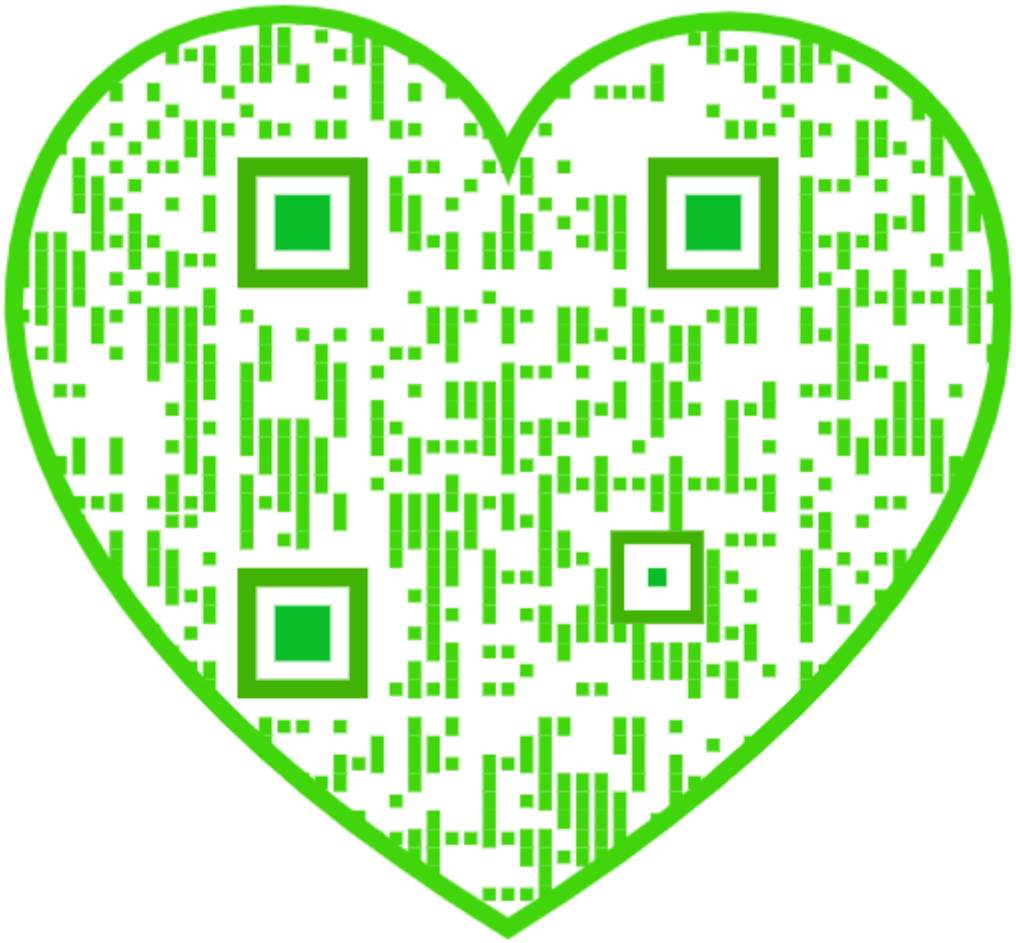

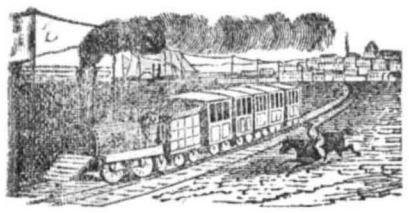

Introduction of Steam Printing.

The first person who introduced steam into a printing office, was Mr. Walter, who was the principal owner of the London Times. On the 29th of November, 1814 he made the experiment, but not without much and virulent opposition,, as the following account will show:

'The night on which this curious machine was first brought into use in its new abode was one of great anxiety and even alarm.—The suspicious pressmen had threatened destruction to any one whose inventions might suspend their employment—'destruction to him and his traps.' They were directed to wait for expected news from the continent. It was about 6 o'clock in the morning, when Mr. Walter went into the press-room and astonished the occupants by telling them that 'The Times' was already printed by steam—that if they attempted violence there was a force ready to suppress it: but if they were peaceable their wages should be continued to every one of them till similar employment could be procured,—a promise which was no doubt, faithfully performed,—and having so said, he distributed several copies among them. Thus was the most hazardous enterprise undertaken and succeesfully carried through, and printing by steam on an almost gigantic scale given to the world.'

The Sun's Mammoth Printing Press.

We have examined with no little pride and satisfaction this splendid invention of R. Hoe, Esq. of this city, who is now in Britain securing a patent for that country. It is a noble monument of mechanical genius and skill. It throws off impressions at the rate of twelve thousand sheets per hour, in fact the feeding is the only limitation of speed. It could print fifty thousand sheets per hour if they could be fed into the rollers quick enough. There are only two of these presses in use in the world, one in Philadelphia and the one in this city belonging to the Sun, whose great circulation demanded some new invention to supply subscribers and the increasing demand for more copies. We will give a more minute description of this invention in the next number of the Scientific American.

Descriptive and Historical Account of Hydraulic and other Machines.

This is the title of a work by Thomas Ewbank, of this city, the first number of which has just issued from the press of Greeley & McElrath, a firm well known for the many useful and instructive works which they have published. This is a second edition of Mr Ewbank's Hydraulics, revised and corrected with a supplementary addition. The author is a practical and highly scientific man and in no work upon the same subject is there such a complete variety of sound and interesting information. The study of this work would save much labor to many mechanics who are expending their energies on what has already been discovered. We therefore recommend it to every mechanic and all of them can purchase it. It is only 25 cents per number and 8 numbers will complete the book. Published by Greeley & McElrath. Orders also received at this office

Attempt at Robbery.

A daring attempt was made to rob the Seventh Ward Bank of this city, between last Saturday evening and Monday morning. The burglars worked through a solid wall of a store next the bank, cut through the iron safe of the bank which was of plate iron 1-4 of an inch in thickness and in a few moments would have laid their hands on one hundred and eighty thousand dollars of gold, when from some cause unknown, they decamped leaving all their tools behind, together with provender for the seige. Let no Bank consider itself safe from the skill and daring of such sappers and miners.

The Yankee Blade.

We are averse to plump queries, but we are agoing to ask our readers a plain, simple question Did you ever see a paper y'clept "The Yankee Blade?" Methinks we hear a portion of our readers say, "We have not!"—For those that reply in the negative our remarks are particularly designed.

You love a laugh! of course!—who does not? A good laugh is the climax of earthly enjoyment. Without one, life would seem an endless void, society a mere drudge; and the world a chaos. It is tho ambrosia of unalloyed pleasure; and its exhilirating propensities are the most active preventatives of anxiety and care. Well then, ye who delight in laughter, ye who are votaries of the proverb, "Laugh and grow Fat;" ye who believe in the pernicious efforts of "Blue Devils," subscribe at once to that Paragon of Newspapers, "The Yankee Blade." You will never regret it, for an hour's perusal has tended more to allay our nervous irritability than all the quack pills and nostrums ever invented. The Blade is filled to overflowing with the "delights of Momus," so full that it spills over into the columns of many of its contemporaries—who herald them forth without credit: trace their paternity and we find their home—"The Yankee Blade." Just take our word: its the tallest paper published Down East.—*Philadelphia Galaxy.*

We respond to the above and would refer our readers to an advertisement of it in another column.

Irish Sculpture.

A gallery of Irish sculpture has been opened in the Dublin Society's rooms. It is one of the first advantages accruing to Irish genius, from the Irish Art Union. The exhibitors are Macdowell, Foley, the Kirks, Hogan, Gallaghen, Smith, the Ferrels, Panorama, and others. It is but fifteen years since there was no Irish sculptor, and the impetus was given by a present from government, of a set of casts of the Elgin marble to the Literary Institution of Cork.

The Capitol.

The Capitol at Washington is in the course of preparation for the meeting of Congress Handsome chandeliers have been introduced In the rotunda, and in both chambers, and in all the passages of the building gas-burners. Along the stone-foot way which extends immediately around the Capitol, have been placed iron lamp-posts, with gilded tops, and intended to be supplied with gas.

The Cotton Crop.

The N. O. Picayune, judging from recent accounts of the "picking," both in its own neighborhood and in the Atlantic States, changes its calculations to a higher figure than it marked a fortnight since. That paper now sets the present crop down at not far short of 2,200,000 bales.

Mackarel Fishery.

We learn from the Halifax papers that the catch of mackarel at St. Margaret's Bay, is enormous, varying from 120 to 300 barrels at a haul of the seines and nets, bidding fair to exceed all former years, All the men, women and children at the Bay are unequal to the task of curing them.

Niagara Suspension Bridge.

The Niagara Suspension Bridge was put under contract Tuesday Nov. 9th., at 180,000 dollars, Mr. Ellet of Philadelphia is the contractor.

Iron In Massachusetts.

Three huge veins of iron ore, have been discovered in Hawley, Mass., worth 63 per. cent of pure metal, and easily wrought. Arrangements are making for erecting a furnace there.

Statue of Corwin.

T. D. Jones, the sculptor, is now modelling a bust of the Hon. Thomas Corwin, of Ohio, ordered by a number of the friends and admirers of that distinguished statesman.

The Germantown Gazette of the 12th inst. was extremely was extremely modest in giving credit to *its* excellent exchange, "*Neteon's* London Journal," for the article "New Sheet Metal for Sheathing."

Surgical Operation.

An unprecedented operation in surgery was performed latety on a young lady living near Columbus, Ohio, by Dr. Robert Thompson, of that city, and Dr. M. Z. Kreider of Lancaster, assisted by several other medical gentlemen. The operation consisted in the removal of the liver in a diseased state, which upon weight amounted to 29½ lbs. independent of material lost during the operation.

The American Ocean Steamers.

The third and fourth steamships of the Ocean Steam Navigation Company are to be called "Franklin" and "Humboldt." The latter name has called forth a letter of thanks from the distinguished and venerable philosopher and historian of that name, in whose honor it was bestowed.

The Vancluse mine, Orange county, Virginia, is the most extensive gold mine now in operation in the United States, the capital of which is to be raised $500,000 divided into $10,000 shares of $50 each. Large subscriptions have been made in Washington. and among them extensive ones for English houses.

It is stated on what is considered authentic information, that not less than 150,000 bushels of wheat were raised in Oregon, during the year 1846.

The wheat crop is said to be very large this year.

The cost of the Railroads authorised by the British Parliament in 1845 and '46 and which were to be completep by 1850, amounted to the enormous sum of one thousand millions of dollars. The length of these lines when completed will be nine thousand miles.

At a convival meeting of lawyers, the president called on the senior solicitor to propose the health of the best friend to the profession.—"The rich man who makes his own will," was the response.

The South Carolinian advertises for several good steady printers, promising 37½ cents per thousand, good copy and work for the session of the Legislature.

The operatives of Chester, Delaware Co., Pa., have held a great meeting on the ten hour system. The speeches delivered were both temperate and able.

The Mechanic's Association of Charleston, S. C., have established a Library and Reading Room. Success to Mechanic's Institutes.—They are a blessing to every place where they are established.

An association has been formed in Boston for the purpose of advancing and promoting the interests of the poor seamstresses.

A fatal disease of small pox in sheep, is cutting off a great number of those animals in Great Britain.

The Europa, a fine steamship for the New York and Liverpool trade, was lately launched at at Greenock, Scotland. She is 1800 tons burden.

Reymond & Waring's elephant broke from his fastenings in Cleaveland, and was found next morning in a garden near by, deliberately stuffing his trunk with cabbages.

The Niagara and Lockport Railroad Extension was put under contract at Lockport on the 12th inst.

"I never," said Voltaire, "was ruined but twice, once when I gained a lawsuit, and once when I lost it.'.

A Tannery is fitting up in Georgetown, D. C., for the purpose of tanning leather by a chemical process.

New, bold, and inspiring ideas are only born of a clear head that stands over a glowing heart. The most precious wine is produced on the sides of volcanoes.

A brother editor states that he estimates the happiness of a newly married couple by the size of the wedding cake that they send him.

A half acre of land slid into Lake Erie, at Cleveland, carrying with it a house, which the occupants had left only the day before.

Deaths By Ship-Fever.

The death roll of the persons who died by ship fever at Grosse Isle, Quebec, during the past season, was 34 feet in length, and the number of deaths was 9,000

Gas Lights.

The streets of St. Louis were lighted with gas for the first time on the night of the 3rd. inst.,

The Mount Savage Iron Works have been sold by the Sheriff for over $200,000. The purchasers were Messrs. Corning and Winslow of Albany, N. Y. and Mr. J. M. Forbes, of Boston, Mass. With a change of proprietorship there will also be a change of name. The company will hereafter be called the "Lulworth iron Company," under an act of incorporation passed by the last Legislature—*Trenton State Gazette.*

Twenty-four dollars, says Watson, in his annals, purchased the whole city and county of New York, two hundred and twenty years ago. The streets were first paved in 1676; in 1711 a slave market was established, in Wall street. The first stage-rout between New York and Boston was established in 1732—time fourteen days from city to city. In 1745 the first coach (Lady Murray's) was driven in New York.

Mr. William Croghan Esq., of Baltimore has a large china bowl, which originally belonged to Oliver Cromwell. It is capable of holding a quart, and is set in very costly fine guilt brass—the setting being probably a hundred years old. The bowl was presented to Mr. Croghan, during his late tour in Europe, by an English gentleman.

Fifty thousand persons assembled on the 20th October, in St. Mark's Square, Venice, and next morning on many of the houses, in charcoal characters, were to be seen the significant phrases, "Viva Pio IX, Viva Italia." Venice is in possession of Austria, a part of her avaricious bargain with Napoleon.

Douglas Jerrold, says, that "if the Emperor of the the Russias chose to sell out the stock he holds in the British funds, he would drain the Bank of England of all its gold." England which boasts of a civilization of a thousand years, is absolutely at the mercy of the sovereign of a people scarcely yet emerged from barbarism?

It is estimated that an aggregate of 10,000 persons attend the public places of amusement in this city nightly, bringing into the pockets of the managers, $5000 equal to $30-000 per week,—or one million and a half of dollars per annum.

Upwards of a thousand bales of cotton were consumed by fire, on the night of the 27th ult., at Drake's landing, on the Warrior river, in Alabama. The warehouse in which it was stored was fired by an incendiary.

A tortoise shell bonnet has been sent to Queen Victoria, from the Navigator Islands and was presented by her to the British Museum.

The son of a French sergeant is ruling Sweden well, exhibiting both in mental and moral ability an example to the house which boasts the blood of Cesaer the great.

The canal through the isthmus of Suez is to be made deep and broad enough to float a first rate man of war.

The whole number of paupers in England is stated to be nine hundred and forty thousand two hundred and ninety-five.

Rice paper is not prepared from the rice grain, but is the production of the solah, an equatic plant, which grows profusely in all the marshes of China.

Lake Superior is 596 feet above the level of the sea, and contains 32,000 square miles. It is 400 miles long, 80 wide, and 2,000 feet deep.

The Postmaster General has given notice that the free transit of British Mails through this country, will cease after the 16th of November.

The corner stone of the city reservoir on Beacon Hill, Boston, was laid on Saturday last with appropriate ceremonies.

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Gold Pens.

It has been said that the first gold pen that ever was used was in 1838. This, however, is not altogether correct, as there is a farmer in Saratoga Co., in this state, a Mr. S Smith, who used one previous to that period, made by himself. The first gold pens manufactured for sale, were made by Mr. Brown, of this city. Mr. Bagley, of this city, whose manufactory is in Broadway, is the largest manufacturer of them in the United States, his expenses of manufacture being about $1000 a week. The gold pen is an American invention, and one export of 1000 gross has been made to England, where they sell for a guinea apiece.

In the manufacture of these pens, the gold is first rolled out in ribbons, and then cut with a die to the required shape; the points put on and then ground down to the required nib.—The points are irridium, a new metal formed with platinum. The points are all imported. The pens and cases sell from $10 to $30 per dozen. The manufacture of the silver cases is a distinct business. It is not easy to make an estimate of the number of pens manufactured per annum, but it is not probably less than 1,000,000. A person who had not thought of the subject, would scarcely suppose that eight hundred pounds weight of gold were used up every year in the manufacture of such a trifling article as pens, a business unknown ten years ago—yet such is the fact. The demand for the article is enormous. The secret of the points is the only one about the whole trade, and any jeweller who can solder a piece of irridium to a piece of cheap gold, can make a pen as good the best.

Steam Rotted Hemp.

As Hemp is an important article of American produce we always intend to present as much chemical knowledge on the subject as we possibly can The following remarks from the St. Louis Revile are worthy of consideration.

We understand that the method of preparing hemp for cordage, without previous rotting, has been pronounced by high authority to be a failure. The hemp thus prepared is subjected to many objections. In the first place it cannot be thoroughly freed from the "shives," or woody substance, which condition is necessary to its reception for naval purposes. Again, it is found to contain the gluten of the rough material, and when wet undergoes the process of fermentation, which injures materially the texture of the cordage made from it. A specimen of this hemp was shown us yesterday, which was certainly quite inferior to some prepared by the steam-rotting process. Another method resorted to, combines the use of sulphate of iron, as an agent in the rotting. A sample of hemp thus prepared, which was shown us, was entirely clean and very strong, but the color was not so good as that of the Illinois hemp, nor was the article so good and pliable.

It is quite likely, all things considered, that the steam rotting process is preferable to all others yet discovered.

Alledged Cure For Hydrophobia.

At Adine, in Friule, a poor man, suffering under the agonising tortures of Hydrophobia, was cured by draughts of vinegar given him by mistake, instead of another portion. Another physician at Padua, got intelligence of this event, and tried the same same remedy upon a patient at the hospital, administering a pound of vinegar in the morning, another at noon, and a third at sunset, and the man was speedily and perfectly cured.

There have been so many alleged cures of hydrophobia, that we have become quite a sceptic of nostrums of vinegar and burned oyster shells. The chloride of lime is the best antidote.

Volcano.

The irruption which we noticed in last week's paper to have taken place in the Look Out Mountains is confirmed by the late news from the South. Enormous rocks were thrown from the mountains into the valleys below, and it is said that the inhabitants in the neighborhood have left their homes. Large beds of bituminous coal are found in the Look Out mountains. The irruption may yet turn out, however, to be a story like "hey diddle diddle"

To Prevent Wood Decaying.

Take 12 ounces of rosin, and eight ounces of roll brimstone, each coarsely powdered, and three gallons of train oil. Heat them slowly, gradually adding four ounces of beeswax, cut in small bits. Frequently stir the liquor, which as soon as the solid ingredients are dissolved, will be fit for use. What remains unused will become hard on cooling, and may be remelted on subsequent occasions When it is fit for use, add as much Spanish brown, or red or yellow ochre, or any color you want, first ground fine in some of the oil, as will give the shade you want; then lay it on as hot and thick as you can with a brush; some days after the first coat is dried, give it a second. It will preserve plank for ages, and keep the weather from driving through brick work. Common white paint may be used on top of it, if required, for the sake of appearance.—Two coats should always be given, and in compound machinery the separate parts should be varnished before they are put together, after which it will be prudent to give a third coating to the joints or to any other part which is peculiarly exposed to moisture, such as water-shoots, flood-gates, the beds of carts, the tops of posts, and all the timber which is near or within the ground. Each coat should be dry before the parts are joined, or the last coat applied. The composition should be applied when the wood is perfectly dry. It is necessary that compositions made of hot oil, should, for the sake of security, be heated in metallic vessels, in the open air; for when the oil is brought to a boiling point, or six hundred of Fahrenheit, the vapor catches fire, and though a lower temperature should be used in this process, it is not always possible to regulate the heat or to prevent the overflowing of the materials, in either of which cases, were the melting performed in a house, fatal accidents might happen.—*Archives of Useful Knowledge.*

American Art Union.

This is an institution incorporated for the encouragement of fine arts in America, and it seeks to accomplish a grand object. With the exception of Italy no country has produced greater painters than America, but we are sorry to say that those have had to seek and sought not in vain, that encouragement in other lands which they found not at home. A better spirit we trust is now abroad, and the American Art Union we hope will be the means of rewarding and exciting the true talent.

Every subscriber of five dollars is a member of the Art-Union for the year, and is entitled to all its privileges. The funds (after paying necessary expenses) are applied: First—To the production of a large and costly Original Engraving from an American painting. Of this engraving every member receives a copy for every five dollars received from him. Every member also receives a full Annual Report of the proceedings, &c. of the institution Second—To the purchase of paintings and culpture by native or resident artists. These paintings vary in price from $15 to $500, are richly framed, and exhibited at the Gallery of the Art-Union till the annual meeting in December, when they are publicly distributed by lot, among the members, each member having one share for every five dollars paid by him.

Each member is thus certain of receiving in return the value of the $5 paid, and may also receive a painting or other work, of art of great value. The institution keeps an office and free picture gallery always open, well attended, and hung with fine paintings, at 497 Broadway, which is thronged day and evening.

This year each member will receive two large engravings. The paintings are more numerous than last year, 180 being already purchased and on the walls of the gallery, and there will be distributed 250 bronze medals commemorative of Washington Alston, which the committee have in progsess for the members alone.

A successful operation in case of deafness was performed in Philadelphia, a few days since. A membraneous substance was removed from the ear, and hearing was found to be as acute as ever.

Female Stock Gamblers.

A London letter in the National Intelligencer says—

But it is not in breadstuffs and grain alone that speculation has been rife, nor has the rage for gambling enterprise been confined to that sex which generally engrosses all its excitements and its risks. Females, ladies—ladies of rank and title!—have frequented the purlieus of Capel Court and the Stock Exchange. and have mixed with the purchasers of such unfeminine wares as funded stocks and railway shares. One lady, a peeress too, is proclaimed as a defaulter to the amount of £200-000, and several other ladies, the wives of men of rank and East India millionaires, are spoken of as having dabbled in the funds and in railroad shares, and to have suffered thereby. The principal lady speculator is mentioned without hesitation in the public journals as being the Marchioness of Aylesbury, the second wife of the Marquis of that title, and the original of the speculation Lady Beltie and Belair of D'Israeli's last novel, Tancred. Her ladyship does not appear to have made any secret of her stock-jobbing propensities, for her carriage, bearing the arms of her noble family, and attended by servants in the family liveries, was very frequently seen in Bartholomew Lane, near the entrance of Cape Court. The Marquis is said to have paid half his wife's deficiences, and to have provided for the payment of the remainder.

A Pitiful Case.

A poor fellow lately appeared in Boston breathing through an aperture in his windpipe about midway from the sternum to the chin. This aperture was made by a musket ball in Mexico, in one of the late battles. He scarcely breathed at all through the throat and had nearly, if not quite lost the power of articulation. It was with great difficulty that he could make himself understood, as he could neither read or write. He could hear distinctly, and make signs to convey his meaning, which with great difficulty were intelligible. He tried to speak so as to be heard, but the volume of breath necessary to form a word or sentence passed out of the windpipe at the aperture before reaching the throat, and prevented the articulation. This aperture was healed, and a silver tube was inserted to assist respiration, which was performed with great difficulty. This was attached to his neck by a string. He had also been wounded, in one of his legs, and he limped in walking. The color of his skin was nearly black, so much so that he looked like an inhabitant of the torrid zone more than one born in this northern latitude.

An Irish Warrior.

During the war in Portugal, an Irish soldier, was placed at a bank which he was to fire over, but was told on no account to show himself. The Irishman, however, did not take this advice, but jumped upon the bank every round he fired to see if it had hit any one. A length a Frenchman shot him through the left hand. It was seen that something had happened, and he was asked what was the matter? The Irishman looked very quietly at his bleeding fist, and scratching his head with the other, said: "I wish I knew who did this!"

A Doubtful Blessing.

A correspondent of the Washington Union speaks of the fine fields which is afforded in Mexico for *medical and surgical* records, as one of the *advantages* likely to arise from the war. This is an advantage that the profession only can properly appreciate or should like to share into any considerable extent.

Extraordinary Preservation.

A lady, Mrs. Bunn, was riding on hoseback some six or seven miles south of this place, says the Louisiana (Mo.) Banner, on Wednesday last, suddenly a large tree was broken off by a gale of wind, that fell across the horse immediately behind the saddle, killing the horse, instantly. The lady escaped without injury

There are 200,000 horses in England and 500,000 dogs One hundred thousand of the former and four hundred and fifty thousand of the latter can well be spared just now.

Infamous Crime.

On Tuesday night, the 8th inst., some mischievous person attempted to blow up a freight train on the Utica and Schenectady Railroad, in the vicinity of St. Johnsville.—Several parcels of gunpowder, put up in paper were placed on the track, with some percussion caps, which exploding as the wheels passed over them, fired off the powder. The wooden casing of the boiler was set on fire and consumed before the flames could be subdued.

The heart that devised the murder of the engineer or any of the persons on that train would not stick at the blackest of crimes, as the attempt to blow up the locomotive shows it to have been steeped in the bonds of the deepest iniquity.

A Hogish Conveyance.

We are indebted to an exchange for the following story, and have just to say that its author was a poor naturalist as hogs never eat beans.

A farmer of St Albans, Vermont, recently made a grand entree into that place, mounted on a car drawn by four large hogs. He entered the town at full trott, amidst the acclamations of hundreds. After making the tour of the market place, three or four times, he went into the wood back yard, had his swinish cattle unharnessed, and taken into a stable together, when they were regaled with a trough full of beans and wash.

Singular Affair.

A gentleman of sixty years of age in Plymouth, Mass., was recently so affected by the death of his wife, that he cut off his nose? He is now in Boston for the purpose of having a new nose made to order. This is a fact, and was communicated to the writer by an officer of the Marine corps, who knows all about it.

Mr. Jenkins says that there may be no question as to the fact that the officer above referred to knows all about it, but he should judge that the story was suitable only to tell to the Marines

Singular Accident.

The Cincinnati Signal learns that on the 17th, as Mr. Sawyer, a young gentleman of high respectability, was riding at a very fast rate to see a female acquaintance at Dearborn county, Indiana, he came up against the Telegraph wires, which cut his throat producing almost instant death. The wires had been lowered for the purpose of making certain repairs on the line.

Surprising Agility.

A story teller in the Boston Courier says — I felt considerable frisky one day, and I went up the lightning rod, hand over hand, as high as the vane. I had a first rate prospect there —but that aint all. A thunder cloud came over, and I saw it was going to strike the steeple, and thinks I to myself, if it hits me I'm done up. So I got ready, and when the crack came, I gave a leap up, let the lightning strike and run down, and then I caught again!"

Hanging Fire.

Recently, during the performance of Hamlet at the theatre Royal, Greenock, a young man, who had taken the part of Laertes, at a short notice, got on pretty correctly till he came to the words, "I have a speech of fire,' and here he stuck dead.—After waiting a few seconds, Mr. D., who was playing the King, replied, "Oh! you have a speech of fire, have you? Well, blaze away by all means."

Phonography.

A student of this great science has come to the conclusion that it is "2 hard 2 b lurnd and fit onli 2 be laft at." We regret his lack of 42de in so 10der an undertaking.

Surface of the Sun.

The surface of the sun contains not less than 2,432,300,000,000 square miles. The contents of the sun amount to 357 billions of cubic miles. It is 545 times larger than all the planetary bodies taken together.

A gentleman wishing to know the price of coal, and observing an Irishman standing near a load, of which he took him to be the owner, inquired. "How is coal now?" "Black ever, your honor?" replied pat.

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New Inventions.

Improved Adjustable Incline Door and Gate Butt.

This is an invention of Mr. Thomas Peck, Syracuse, N. Y., and it is a most excellent one. On the casing of the door is fastened the adjustable incline plane, on which works an anti-friction roller, which roller is fastened on the door, so that there is but little friction. The incline can be altered to any grade so as to suit the weight of the door or gate to which the butt is attached. This is done by a set screw which works in a slot in the incline, so that without altering the hanging of the door, it can be raised to any required height.

These butts make the door or gate to which they may be attached very close when shut, nearly air tight, and by moving the door on an incline, it can be raised over carpets, or if a gate, over snow as deep as the steepness of the incline. Gates on which this butt is attached can be opened the full width so as to allow teams to pass, or other vehicles, a much easier method than by lifting up a ball or chain, as the anti-friction roller rests in a small dentation on the end of the incline to hold the gate or door fast when it is open, and it can be shut just with a touch of the hand. This invention is also good because is is cheaper than any common plan for the same purpose. A model may be seen for a few days at Lovejoy's Hotel in this city, and all communications about sale, or rights, addressed post paid to Geer, Woolson & Brothers, Syracuse, N. Y., the proprietors of this patent for all the United States except this city, Jersey and South Carolina, will be promptly attended to. In our list of patents for April 10th, 1847, a mistake was made in reference to the patent for the above invention, by stating that letters patent were granted to Thomas Peck for improvements in Saw Mill Gearing. It should have read "improvement in devices for closing doors, &c."

Evaporation Grate.

Mr. D. Bettoner of this city, has invented a novel grate which in some cases will be very useful and beneficial.

With the exception of two handsome ornaments in front, it has the same appearance as any other parlor grate, yet by a simple scientific evaporating apparatus, from thirty to sixty gallons of water, if required, can be evaporated during the day. A mild vapour is thrown out, and not a hot steam; the invention appears to control the amount of the vapor, and and even the force of the fire which produces it.

Street Cleaning Machine.

The street cleaning machine, an English invention, which we described in No. 48, vol. 2, Scientific American, was recently tested in a strife with hand labor, in Mnnchester, and t did better work and as much, with only the attendance of two men, than thirty men sweeping and using hoes and shovels.

Improvement in the Manufacture of Cotton Cord.

We have lately seen a most beautiful specimen of cotton cord, made in the factory of W. C. Noyes, Esq of this city, superintended by Mr. T G. Boone, of Brooklyn It is equal in appearance to the imported linen cord, is very strong and smooth. We believe that application has been made for a patent for this valuable invention, the process of manufacture being entirely new.

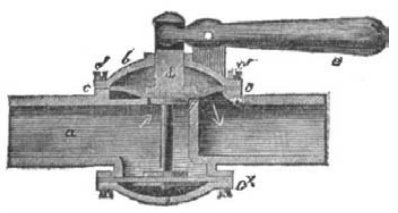
New Lubricating Compound.

Lewis Kirk, the inventor of the steam hammer, and John Dodsworth, of Reading, Penn. have invented a new compound which they say "experience has proved to be a superior compound for preventing friction. The invention is the union, under a high degree of heat, of oil with asphaltum, or with coal tar, or with both together.

Method of Preserving the Denominations of a Bank Bill from being Altered.

Messrs., Crane and Co., of Dayton, Massachusetts, manufacturers of bank paper, have invented a very simple and efficient method of preserving the denomination of a bill from alteration. Threads of silk and cotton are so arranged in parallel lines, lengthways with the note, and embodied in the substance of the paper during its manufacture. A one dollar bill has one thread, and one is added for each denomination up to five dollars, then a ten dollar bill has 6, another is added for twenty, fifty, one hundred, five hundred, and one thousand; the last having eleven threads. It must be very difficult, if not impossible to insert another thread after once the note is finished, and as the threads mark its value as distinctly as the figures, the chances of a successful alteration are at least very greatly diminished. The Mechanics' Banking Association of this city, and several of the banks in this state and at the east, have ordered the threaded paper, and it will probably come into general use. It is desirable that something should be hit upon that will prevent the frequent frauds upon the public from the alteration of bank bills

Improvement in Water Taps, Cistern Valves, &c.



This is a new description of tap, which is not only far more safe, but can be constructed at less cost than the common description of cocks. This is effected by a novel and ingenious application of two flexible diaphragms —the upper of which, being acted upon by the lower, is pulled down on its seat, and forms a perfectly leakless joint. The above engraving represents a longitudinal section of a tap for ordinary purposes as closed—*a*, is the barrel; *b*, the cover; *c* and *cx* are two flexible diaphragms of vulcanised caoutchouc, fastened by screws as represented; the top one is acted on by the spindle and disc *d*, moved by the lever *e*; the lower diaphragm forms a surface to be pressed upon by the column of water above the tap, which pressure by means of the upright spindle connecting it with *d*, pulls down the upper diaphragm, and forms a perfect valve and stuffing box, whereby the escape of the liquid is entirely prevented. The arrows indicate the course of the liquid; and the pressure may be regulated by adapting the areas of the two to the degree of tightness required, it being in proportion as the bottom one exceeds the top in area. It will be observed, that its motion is almost void of friction; and we consider it a beautiful application, which may in time supersede the old form of tap. For cistern valves, they are well adapted—opening the full area upon the least descent of the ball, and are not liable to be set fast.

Improved Rock Drill.

P. Wightman and Horace Vaughan, of East Greenwich, Rhode Island, have made an important improvement in combining the drill with a wheel and an inclined block, by which the drill is elevated, turned and dropped by a cord working on the block. It will be recollected that we published an account taken from one of our English exchanges, of an American Rock Drill which is now used on the Caledonian Railway, and which far surpasses any thing of the kind in Britain, a fact which is candidly acknowledged by the English engineers.

New Railway Signal

A signal of a novel description has recently been fixed to the guards' carriages, on the South-Western line, England, consisting of an enormous bell, and a red flag. Upon the guard discovering anything wrong in the train he can by merely pulling a wire, cause the bell to ring very loud, and at the same time a red flag flies up, as a signal that the engine driver is immediately to stop the train.

Washing Machine.

Numerous washing machines have been invented to save the fair sex from the severe labors of the Wash-board. Yet for all the inventions relating to the saving of female labor, it is a fact that washing machines are used to a very limited extent. Some washing machines are worse than useless, others again are very good, but, unless in the saving of severe labor, we have not seen one that equals a good pair of hands. We hope yet to see a machine of this kind that will prove to be the grand female friend, for why should not washing machines be made like other kinds of machines, both to accomplish more labor and do it as well as it can be done by hand.

Mr. W. Younger, of Huntington, Tenn., has invented a new washing machine, which by a rotary motion of a driving roller, he has combined a toothed roller and a fluted one and a rubbing board. The rubbing board rubs the clothing and the fluted roller, by the motion of the others, presses the clothes, squeezing them and by its rotary motion turns them at the same time.

Another Washing Machine.

Mr. Joseph Hall, of Otisfield, Maine, has invented a washing machine whereby he has an endless belt which works in a rotary manner fluted rollers pressing as they revolve upon the clothes, changing their position and rubbing them, it may be said, in this manner, as the clothes are pressed, or are changed in the washing box which is also fluted, (blunt grooves.)

Swimming Skate.

This is the name of an English invention, intended to facilitate swimming, and which we should think might prove useful, in places where bridges and boats are scarce. It is a piece of wood furnished with two parallel rows of plates, folding over each other, so as to resemble, in some degree, the laths of a blind. They open or shut, according as the foot to which the skate is attached moves downwards or upwards and the swimmer advances by the alternate motion of his limbs, as in mounting a stair, keeping the body and head inclined a little forward, as in skating.—By the aid of this instrument the skater can turn in any direction he pleases, raise himself out of the water as high as the girdle, and continue the exercise almost as long as that of walking. In order to plunge to the bottom he has only to raise himself, by quick motions of his limbs, as high above the surface as possible, and then point the toes downwards.

Coming the Dodge over the Fowls.

The Perry, Ohio, Democrat, has the following invention, which for productiveness in the egg line, hoes out Aladin's lamp as easy as Saladin's blade divided the silken cushion.

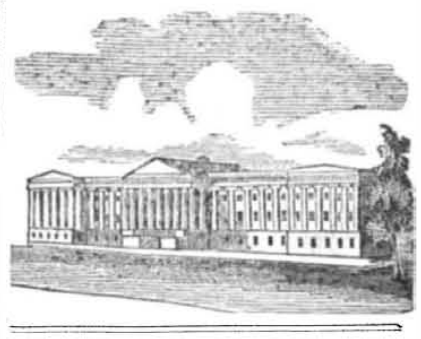
"Mr. J. N. S., in this village, claims to possess letters patent for an ingenious "Hen's Nest," which he thus describes: The bottom of the nest is so donstructed as to let the egg through, and out of sight; when the hen turns round to view her production, cackling her delight the while, she is astonished to find her nest empty!—so naturally supposing herself mistaken, she again sits down and lays another egg;—and so on, until the necessary number of eggs required are obtained. Mr. S. does not manufactnre the nest, but offers "rights" forsale. This nest would be an excellent accompaniment to the "Steam Egg Hatching Machine."

Veneering Metal Plates.

An ingenious mechanic in Manchester, England, has taken out a patent for making thin metallic plates as substitutes for mahogany and other veneers of wood. He fastens his plates by fine screws in any waving or curving lines, and then japans them in all the most varied and beautiful shades. In fact, it is said to be a wonderful improvement, as the fineness of the surface cannot be equalled by wood, as the variety of blendings by the japan opens up a field for artistical display in colors.

Improvement in Roving Cans.

Mr. J. W. Strange, of Taunton, Mass., has invented an improved method of laying roving in cans. He combines with the coiling apparatus his machinery so that a rotary motion is imparted to the vertical axis of the can into which the roving is coiled, so as to produce a twist in the roving.



LIST OF PATENTS

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending Nov. 13, 1847.

To Philip Pitts Read, of Durham, Mass., for improvement in Horse Shoe Machines.—Patented Nov. 13, 1847.

To A Gould and William T. G. Morton, of Boston, Mass., for improvement in apparatus for inhaling ether, &c., (said Gould having assigned to the said Morton.) Patented Nov. 13, 1847.

To Stephen H. Long, of Louisville, Ky., for improvement in Bridges. Patented Nov. 13, 1847.

To George Escol Sellers, of Pittsfield, Ohio, for improvement in machinery for ascending and descending incline planes. Patented Nov. 13, 1847.

To Richard F. Loper, of Philadelphia, Penn., for improvement in Ship Building.—Patented Nov. 13, 1847.

To John Wind, of Thomasville, Ga., for improvement in Cotton Cleaners. Patented Nov. 13, 1847.

To H. B. Fernald, of Boston, Mass., for improvement in Alarms for Steam Boilers. Patented Nov. 13, 1847.

INVENTOR'S CLAIMS.

Packing and Pressing Cotton.

Mary Ann Mead (executor of James Mead deceased,) of Aurora, Ia., for improvements in packing and pressing cotton.—Patented 14 August, 1847. Claim—What I claim therein as new, and desire to be secured by Letters Patent is the within described apparatus for forming a bale of cotton under pressure on a spindle or revolving rod, but I do not intend by this specification to limit myself to the precise arrangement herein described, so long as I attain the same end by equivalent means. For instance, the pressure of the roller may be increased by the aid of levers or the hydraulic cylinder, and geering by a pair of conical pulleys may be applied to adapt the power to the increased size of the bale, &c. Also the rod may be of several pieces to facilitate its withdrawal, and an endless apron may be applied to the table.

Winnowing Machines.

By Jacob Behel, of Mifflintown, Pa.,—Improvement in winnowing Machines, Patented August 21, 1847. Claim—Having thus fully described my improved winnowing machine, what I claim therein as new, and desire to secure by Letters Patent is the forming of a series of shoulders one above another on the inclined board, forming the bottom of the hopper, in combination with the reciprocating longitudinal movement of the same, for the purpose of regulating the feed from the hopper, substantially as herein set forth. I also claim the combination of the separator shaft with the shoe, and with the pitman, for the purpose of imparting to it a reciprocating horizontal movement, and a vibratory movement on its axis at the same time, substantially in the manner and for the purpose set forth I also claim the combination of the screen and the slate with the apron, substantially in the manner and for the purpose set forth.

Decorations in Leather.

This beautiful discovery is now coming into general use. The process is simple; the leather is first subjected to the action of steam in a metal trough, which renders it susceptible of very minute impressions. The design it is to assume is formed in a metal mould, and into this the leather, in its pliant state is forced by a hydraulic power.

A merchant has been convicted in Glasgow for adulterating the meal to the Highland poor.

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NEW YORK, NOVEMBER 20, 1847.

The Relation of Nature and Art.

The illustrations of the mechanical properties of matter and the laws of force are drawn promiscuously from nature and art. It is not by design that examples taken from these distinct sources thus intermingle, but simply because they suggest themselves as readily from the one source as the other—from nature as abundantly as from art. There is a relation between nature and art—a relation amounting to more than a resemblance ; a relation by which the eye of the practical man may be guided to that God who works with him in every operation of his skill, and mechanical art be elevated from a position which is sometimes unjustly assigned to it among the elements of knowledge. It is from this relation between the Author of nature and the being in whom the works of art have their origin that arise these relations, infinitely remote but distinct, between the things themselves, of which the evidence is every where around us. These are necessary relations: it is not that the works of art are made by any purpose or intention in the resemblance of those of nature, or that there is any unseen influence of nature itself upon art—the primary relation is in the causes whence these severally proceed. Thus it is possible, that in the infinities of nature, every thing in art may find its type ; this however, is not necessarily the case, since the causes are infinitely removed, and moreover, in their operation, are independent, and since nature operates upon materials which are not within the resources of art. How full of pride is the thought, that in every exercise of human skill, in each ingenious adaptation, and in each complicated contrivance and combination of art, there is included an exercise of a faculty which is akin to the wisdom manifested in creation ! But how full of humility is the comparison which, placing the most ingenious and the most perfect of the efforts of human skill by the side of one of the simplest of the works of nature, shows us but one or two rude attempts of approach to it. Praxitiletes, Angelo, Raphael and Canova, in their works will serve as one illustration. What were they but copyists of nature, and do we not almost worship their memories because they have left behind resemblances of the exquisite models of nature that stood before them. Eyes they chiselled out, but they saw not ; limbs, but they moved not ; veins, but the purple current bounded not through them ; landscapes, but the green grass waved not.—Thus in the contemplation of the relations of art to nature, how irresistibly is the mind led up from art to nature and to Nature's God.

Occupations.

What an absurd idea it is which supposes that an occupation gives character to a man apart from the honest nature of that occupation One occupation is just as honorable as another, if it is an honest one. The man who holds the plough, wields the hammer, or drives the jack plane, is just as much estimated in the eyes of his Creator as a preacher or orator, banker or merchant. But alas for the pride of the present day and the notions of vulgarity imbibed and ingrained in too many fathers and mothers, and these trades-people too, that so far from remembering the good old times "when Adam delved and Eve spun," nothing will do but to educate their sons and daughters for ladies and the learned professions. All labor is honorable, and the mechanic and merchant are alike honorable in their professions as they are intelligent, honest and industrious. Without these requisites no occupation can make a man honorable.—Those who do no labor, follow after a most dishonorable calling—that of idleness. The rich and the poor can labor in their separate spheres, but to do good all labor must be directed to some object of utility, whether it be in objects of taste or necessity. Let mechanics pride themselves in their occupations—let them by intelligence, good manners, industry, economy and honesty, feel a consciousness of those virtues practised, and in a very short time we predict an influence exerted by them, as powerful as they are strong in numbers.

Mechanics Industrial Association.

The American Mechanics Advocate suggests the following plan of association which we think is excellent, only we must say that for any association to effect much good, to be united, to be agreeable, they must be of one faith and all honest and tried, and for some time to take things as they find them, not as they should like them to be.

Let twenty men associate together, and contribute one dollar per week, for one year ; a second year fifty cents per week ; a third, fourth and fifth years, twenty five cents per week ; they will have, with the interest on the first four years contributions, the sum of $2,464 80, which will give to each man a farm of seventy three acres of good land, purchased at one dollar per acre, or fifty acres at one dollar and twenty five cents, at which price he can have the choice of government land, and have a balance left of $1004 80 left to convey them to their settlement and stock their farms with all that is necessary to commence operations. Here an association of only twenty men, in five years can make themselves independent by becoming their own masters. A single man in five years, at the above rate, $123 24, but you will rarely find a single man to undertake it. Man, by association, can accomplish that which he cannot do alone.

Originals.

Those would-be-scientific gentlemen of the press who once expended a useless amount of evanescent knowledge about purloining original articles, have lately become very modest, as one of them has donned the Skirt Expander, which appeared last March in the Scientific American, and two weeks ago paraded our Organic Vibrator, which appeared in No. 2, vol. 3. The Scientific American is the mirrer which reflects upon their columns all the useful and scientific information to be found therein.

The following we clip, says the New York Farmer and Mechanic, from the Southern Cultivator The Editor says : "Take one pound of pounded logwood, boil it in a sufficient quantity of water until all the substance is out of it, then take about half a gallon of the liquor and dissolve one ounce of verdigris and half an ounce of alum in it, boil your yarn in the loggwood water one hour, stirring and keeping it loose. Take out your yarn, mix the half gallon that contains the verdigris and alum, then put your yarn into the mixture, and boil it four hours, stirring and keeping it loose all the time, and taking it out every hour to give it air, after which dry it, then boil in in soap and water, and it is done. The above will dye six pounds of cotton yarn an elegant deep blue. After which put in as much yarn into the same liquor, and boil it three hours, stirring as above, and you will have a good pale blue, or boil hickory bark in your liquor and you will have a beautiful green. Rest assured there is no imposition in the above. It is cheap. Any person following the recipe will find it proves satisfactory."

Well, that is a good one. A very satisfactory recipe indeed, to expend five hours to dye a color worth four cents per pound and will last "over night," like bass wood rails "if it don't rain." It is singular to perceive so little scientific knowledge regarding the nature of cotton, among professional men.

The Evening Schools.

The Evening Schools are now opened in the following places in this city, to be continued throughout the winter season :—No. 10, in James street ; No. 16, Munroe street ; No. 5, corner of Stanton and Sheriff streets ; No. 20, in Thirteenth street. Application for admission may be made to the principal teacher in each school. We hope that apprentices will avail themselves of the rich blessings of a free education. Privileges neglected in youth are causes of sorrow in manhood.

Electrotype and Electro-Gilding.

NO. VII.

BRONZING.

Medals taken from the moulds generally present a very brilliant surface. When this is the case they are ready for the cabinet. This bright silvery tint is only obtained on first specimens. The new made mould is covered with a metallic coat which attaches itself so firm to the deposited copper, that it can be polished without affecting the deposit. Specimens of this description by exposure to the atmosphere, require now and again the application of a plate brush to restore their primitive brilliancy. To prevent a sameness in a cabinet of medals and plate, it is good to have a variety of bronzing. A very good chemical bronze may be made by boiling two ounces of carbonate of ammonia with one ounce of acetate of copper in half a pint of vinegar till the vinegar is nearly evaporated. Into this pour sixty two grains of the muriate of ammonia and sixteen grains of oxalic acid with a little vinegar, Then replace the vessel on the fire, boil slightly and take it off, filter it when cold through clear white filtering paper, and bottle it for use. This can only be applied to medals that are perfectly bright and clean. Medals that are not very bright and clean may be polished with a hard brush, rotten stone, soap and water, afterwards dried and polished with a leather and plate brush. To apply the bronze, first warm the medal or plate, and with a camel hair pencil brush the bronze liquor over the surface of the medal for half a minute and afterwards pour boiling water on it, and when the medal is dry, which will be almost instantaneous, rub its surface lightly with soft cotton and a little fine oil and by a gentle rubbing with dry cotton, the operation is perfected. The color produced by this bronze is nearly red. Care must be taken that the vinegar of the bronze be perfectly washed away, otherwise in a few days the medal will exhibit green spots, the effects of the vinegar (acetate of copper.)

Blacklead bronze is obtained from plumbago, by its application to the medal immediately after the medal is separated from the mould. Only if the medal is taken from a wax mould it should be first cleaned with liquid soda.

To apply it, the surface of the medal must be brushed with the lead and the medal laid on the fire, which must be clear, until the medal is too hot to be touched, when it is taken off and brushed with a plate brush, when it is cold enough not to burn it. A few strokes of the brush will produce a fine dark brown polish nearly black, but different from the appearance of blacklead. And if this operation is made on a medal, a few days from the mould, or one already polished, a more red and very brilliant tint is produced.

Rouge is a fine bronzing powder, if moistened with water and applied like plumbago, and a very fine bronze powder for medals, of almost all shades, is made by mixtures of rouge and plumbago in different quantities, increasing the plumbago for dark shades. By these receipts for bronzing electrotype medals a cabinet may exhibit all the different shades from a clear silvery color to nearly a shining jet.

Steam Navigation on the Orinoco.

A bill has been reported in the Legislature of New York incorporating Vespasian Ellis, Esq., of this city, and such as may be associated with him, under the name of the Orinoco Steam Navigation Company, for the purpose of contributing and investing by joint subscription, the sum of three hundred thousand dollars, in order to purchase steamboats, and make all other necessary arrangements to navigate the Orinoco River, and its tributaries in the Republic of Venezuela, under a grant made to said Vespasian Ellis, and his associates and successors, by the Congress of said Republic.

Turpentine Distillery.

The Bath, Me., Tribune says that the Cascade Company in Hallowell, have erected a building in that town for distilling spirits of turpentine. They have one thousand barrels of pitch on hand and are expecting three thousand barrels more. The same company intend putting in operation a Linseed Oil Mill on the Cascade on Vaughan's stream

Another Patent Case.

A patent case, B. J. Wilder. vs. C. J. Gaylor and L. Brown, for damages for the infringment of a patent for the manufacture of Salamander Safes, was tried in this city last week before Judge Nelson. The Court stated the claim to be for the discovery of plaster of Paris as a non conductor, and applying it as an improvement to the Double Safe formerly in use, and considered the patent to come within the Patent Laws.

It was shewn that Mr. Fitzgerald, who took out the patent and subsequently assigned the right, commenced making experiments as early as 1830, and in 1832 applied it to small model safes. In 1836 he applied for a patent, but owing to the patent office being burnt down, he did not then get the patent, but renewed the application in 1837, '38 and '39 ; and although he did not secure the patent till 1843, he was considered as having made the application in 1836, provided he used due diligence, under the circumstances, in following up the application In opposition to the claim, a safe was exhibited in court made by Mr. Jas. Conner, who was engaged in the stereotype business, and in the use of plaster of Paris, as early as Sept. 1832. It is on the same principle as the patent now contended for, with the exception of the lid, which does not have plaster in it. The safe was used by Mr. Conner in which to keep his punches.—This was practically using plaster of Paris for the manufacture of iron chests previous to Mr. Fitzgerald. Others shewed that they applied plaster as late as 1834 or 1835, but these were subsequent to that of Mr. Fitzgerald.

The Court in its charge to the jury said that because Mr. Conner merely made his chest for private convenience, did not present it to the public, and it was afterwards neglected or forgotten, it was considered not to affect Mr. Fitzgerald's right, and through him the plaintiff, provided Mr. Fitzgerald took measures practically to test the improvement for public use, and if he was also an original discoverer of the properties of the plaster, and its advantages as now applied. By this test the jury must decide, and as to damages should they find in favor of plaintiff, they must find for the profit accruing on those made and sold by defendants from Sept. 1845, when they commenced the manufacture of the article, to Feb. 1846, the time of the commencement of this suit, that being all that can be claimed or allowed in the present action.

A verdict was rendered for plaintiff, (Wilder.) for $1800.

Elective Franchise.

In Great Britain there are eight hundred thousand voters, in the United States three millions, in France three hundred thousand. According to the population of the different countries America has five times more voters than England and fifteen times more than France.

A young lady aged 16, hitherto much respected, was indicted last week at Pittsburg for larceny.

Scientific American—Bound Volumes.

The second volume of the Scientific American, bound in a superb manner, containing 416 pages choice reading matter, a list of all the patents granted at the United States Patent Office during the year, and illustrated with over 300 beautiful descriptive engravings of new and improved machines, for sale at this office—Price $2,75. The volume may also be had in sheets, in suitable form for mailing—at $2.

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The Process of a Sculptor.

From a paper in the literary world, signed G. H. Calvert, we extract the following account of the method in which statues are wrought from the block of marble:—

The conception being matured in the artist's mind, the first step in the process of giving form to it is to erect, on a firm pedestal, a skeleton of iron, whose height, breadth, and limbs, are determined by the size and shape of the proposed statue. In this case it would be about five feet high, with branches, first at the shoulders, running down forward for the arms, then at the hips to support the large mass of clay in the trunk, and thence divided in two for the legs. About this strong, simple frame is now roughly built, with wet clay, the pre-determined image. Rapidly is this moulded into an approximation to the human form: and when the trunk, head, and limbs have been definitely shaped then begins the close labor of the mind. The living models are summoned, and by their aid the surface is wrought to its last stage of finish. I say models, for to achieve adequately a high ideal several are needed. Nature rarely centres in one individual all her gifts of corporal beauty. For the Eve, Powers had more than a score of models.

The modern Christian artist cannot be favored as was the painter Zeuxis of old, to whom a Grecian city that had ordered from him a picture of Helen, sent a number of its choicest maidens, that out of their various graces and beauties he might, as it were, extract one matchless form For the "Slave" the character Powers had established in Florence, for purity and uprightness, obtained for him one model (who was not a professional sitter,) of such perfection of form as to furnish nearly all that he could derive from a model. With this breathing figure before him and through his precise knowledge of the form and expression of every part of the human body, obtained from the study of nature and his own deep artistic intuitions, the clay under his hands gradually grew into life, and assumed the elastic, vital look which no more anatomical knowledge or craft of hand can give, but which is imparted by the genial sympathy with nature's living forms in alliance with a warm sensibility to the beautiful —qualities which crown and render effectual the other less elevated endowments for art. Thus, by the most minute manual labor, directed by those high and refined mental gifts, the clay model of the "Slave" was wrought out; and there the artist's work ended—the creation was complete. The process whereby it was now to be transferred to marble, though of a delicate, difficult kind, and requiring labor and time, are purely mechanical, and are performed, under the artist's direction, by uninspired hands.

In order that a soft clay image be transformed into a harder substance, without suffering the least change in its surface, a mould is applied to it in the same way and with the same material as when a cast is taken of the living face or head, by means of semi-liquid plaster of Paris. The clay figure is entirely covered with this substance, from one to two or more inches thick, provision being made for taking off the arms, and for splitting the trunk after the plaster shall have hardened. The clay is then all taken out, the hollow mould is cleaned, and then refilled with semi-liquid plaster of Paris. When this, which now occupies entirely and minutely the place of the clay, has in its turn become hardened, the outside crust of plaster, is then broken from it, and then is laid bare an exact fac-simile of the original clay figure in hard, smooth plaster of Paris, capable of bearing the usage of the studio, and of receiving the many marks that are to guide the marble cutters, whose work now begins.

First comes the blocker-out with his heavy mallet and coarse chisel, under whose rough blows the white block soon begins to grow into a rude likeness of humanity. Then, a finer workman, who loosens more of the folds that overlie the beaming image which the artist is bent on disclosing from the centre of the marble. And finally, the artist himself, or, in this case, a refined worker, schooled under the eye of Powers, gives the finishing touches, reproducing with unsurpassed accuracy, in the transparent, pure marble, every swell and indentation, and minute curves, all the countless delicacies of detail, the which combined with and forming grand sweeping lines, characterize the original as moulded in the clay by the hand of Powers.

A Hindoo Genius.

A native of Calcutta, by hereditary profession a blacksmith, who was employed for many years in cutting punches for the press, having now little occupation, has adopted the following ingenious mode of obtaining a livelihood;—He has manufactured an iron press upon the model of one of those in use here, and set up a printing-office, at which he has commenced printing for the country at large Last year he produced a native almanac, of a superior character, which had a remarkable run. Soon after this he began to engrave on lead, pictures of the gods and goddesses, of the Hindoo Pantheon, of which hundreds of thousands were struck off on inferior paper, and obtained a ready sale. Some of them were afterwards adorned by the art of the limner, and being set in frames, sold of course for a higher price.—Hawkers were employed in traversing the country with packs of these mythological prints, both on account of our Serampore printer, and others who found it advantageous to imitate his example at Calcutta Hence there there are few villages to be found in a circle of many miles round the country in which the cottage of perhaps the poorest individual is not supplied with the veritable effigy of some one of the popular gods. The supply, however, soon became too great for the demand, and his competitors relinquished the trade, which has since languished, and is now confined to a very limited extent. But his ingenuity was not exhausted.

He determined to print English books for the numerous youths of the poorer classes, who are now endeavoring to obtain a smattering of our tongue, and for whom even the low-priced elementary works of the Calcutta School Book Society are too high. Of these works thousands of pirated copies have been printed in Calcutta, and disseminated through the country. But the individual we allude to, finding English type, at second-hand too dear for his purpose, has cut a set of punches for himself, and cast the types which he employs for this work. They are entirely wanting in that beauty and exquisite accuracy which characterize English types, but to an inexperienced eye the difference between them from letters cast in Europe or America would scarcely be apparent: and to a native, the inferiority would be altogether imperceptible Thus furnished with his own apparatus of a typographical establishment, he is enabled to produce works at so cheap a rate, as completely to undersell the presses in Calcutta. The native booksellers in that city, a rising race, though at present of little note, are happy to avail themselves of his labors, and purchase edition after edition of his cheap books. As soon as education in the vernacular language becomes the order of the day, it is by such men, and such means that books will be multiplied. Capital will be poured in upon the enterprise; the natives who are acquainted both with English and Bengalee, will find it to their advantage to cater for the press, and the means of improvement will be placed within the reach of the middling and lower classes of society.—*Calcutta Gazette.*

Semi-Humanity.

One of those strange beings who stand midway between the ape and the negro, the Bosjeman, or Bushman, of South Africa, is said to have arrived in the city, and will probably soon make his public debut.—Several specimens, male and female, adult and infant, have been exhibited in England This individual is stated to be 18 years old, about four feet in height, and has been taught to shape his natural gibberish into some semblance of English. The tribe of which he is a member, subsist on lizards, ants, and other varment. They are governed by no laws but those of nature in her rudest condition.

The French Government have established a bounty for the encouragement of the growth of the black walnut of America, in France.

Antidote for Cholera.

The late accounts from Europe inform us that this fearful scourge is on its scathing mission, and we as a prudent people should be prepared by all the means that lie in our power to mitigate the evil, or arrest its progress should it reach our shores. A celebrated physician in Bristol, England, has lately published the following conclusions, the result of much practical experience, and we coincide with him in every sentiment, well knowing the disinfecting nature of chlorine gas.

1. That the cause of cholera is a putrid animal poison, capable of being recognized by the smell by some, emanating from and surrounding the dead or living cholera subjects or articles of clothing.

2. That it is not sulphuretted hydrogen or hydrosulphurett of ammonia, as it does not decompose salts or lead or zinc, and when passed through nitrate of silver it only forms a red solution when exposed to light.

3. That it is only received into the living body through the lungs, and cannot be propagated by innoculation.

4. That affection can be conveyed by articles of clothing, bedding, &c ; and that washerwomen are more subject to infection than ordinary persons from that cause.

5. That all persons are not equally liable to infection from equal exposure, and even the same individual becomes more sensitive under certain circumstances.

6. That the poison is destroyed by chlorine gas and heat of 300° Fahreheit.

His object, Mr. Herapath, the physician referred to, says is to give public opinion a right direction so as to help the future boards of health to combat this insidious and powerful enemy, I must at once state that the two most popular of disinfectants of the day—the chloride of zinc and the nitrate of lead, known as Sir W Burnett's and Ledoyen's, will be of no avail, though they will promptly remove ordinary putrid effluvia. The only chemical preventive he depended on in his numerous exposures to the virue was chlorine gas, and this he believes to be a perfect one if the fumigation is complete. In 1822 he invariably passed through an atmosphere of it on his return home, and kept it escaping in his residence during the continuance of the disease in the city.

Wagon Shelvins.

The following kind of wagon shelvins I have used for 28 years, and believe them to be better then any others I ever saw and they are not a few:

Take two sills or side pieces 12 or 14 feet long, and 3½ inches thick, by 6½ wide; I put three mortices through each of the sills, 6 inches wide and 1½ thick Two of these mortices are about one foot from the end of each sill, the other in the middle, these should be near the bottom of the sills, as they lie on the wagon bolster, Into these mortices in the sills are framed three cross pieces, and mortices through them slanting close to the sills, into which arms or upright pieces are fitted, resting on the sills to support them. These arms are raised and lowered just high enough to keep all the loading clear from the wheels. On these arms put two or three boards and fasten them with nails or screws, so that in removing the shelvin from the wagons, these side are taken off separate from the bottom of the sills.

Put one mortice three or four inches wide, in the forward end of each. Into these mortices fit two upright pieces, 7 feet high. with two or three cross-bars of suitable lenngth. This answers for a ladder for building a load against, for fastening bales, and for putting the fore end of the boom when binding. F.

Mining Telegraphs.

The *Mining Journal* proposes to apply a Telegraph not unlike to House's, to give warning or tidings of any mishap in any mine, from fire damp explosions, falls of roofs, interruptions of water, foul air, &c., and for simplifying mining operations.

The man who cut the first tree in the wilds of Ohio, is still alive. His name is Daniel Cushwell, and he resides on a small farm in Onida Co., N. Y., and is eighty-six years of age.

Circulation of the Blood.

It is estimated by Hoffman and Haller that the weight of the blood in the human system is about one-fifth of that of the whole body. Thus, if a man weighs one hundred and fifty pounds, the weight of the blood will be thirty pounds. And again, that the left ventricle of the heart sends forth at each of its contractions about two ounces of blood. These data which are considered by physiologists generally to approximate near the truth, make it an easy matter to calculate the time required for the whole mass of blood to pass through the heart, and consequently its rapidity in the rest of the organization.

Thus, it will require two hundred and forty beats of the heart to convey the thirty pounds through it. This will be accomplished in a little more than three minutes—allowing seventy pulsations per minute, which is the usual standard for health. Hence, the bloop which circulates in the remotest extremity of the body is renewed, or changed from venous into arterial in the short space of some three or four minutes. Fluids containing certain medical properties have been injected into the veins one one side of the body, and in twenty seconds, the same medical properties have been detected in the blood drawn from an artery of the opposite side.

The rapidity with which medical substances may be brought into contact with all parts of the living tissues, has induced some medical practitioners to administer cathartics and emetics by injecting them into the veins; a minute quantity of medicine acting very speedily when administered in this manner But physicians of the present day are deterred from this practice by the occasional intervention of untoward circumstances. In the Veterinary establishment of Copenhagen, however, the injection of medicine into the veins is much practiced, on account of its more prompt effect and as matter of economy. The results are said to be perfectly satisfactory.

A Frenchman's Account of English Soups and Stomachs.

The English soups consist of turtle: a compound of that animals and of coxcombs, mushrooms, ham and spices. There is but one house in London where it is to be seen; but the price forbids it being eaten, as it is four francs a portion. However, there is a substitute called mock turtle, which is within the capabilities of ordinary purses. Next to the turtles, real and mock, come the tribes of gravy, ox-tail, gibbet, hare, pea, mutton broth and mulligatawny. The last named is a horrid importation from India, composed of all kinds of fiery ingredients, and so pungent that few of us Frenchmen could dip the tip of their finger in it with impunity. But the English, of both sexes, actually devour it like salamanders, and the police do not think of interfering to prevent them. An Englishman's stomach is endued with marvellous elasticity, and easily digests four meals a day.

Curious Particulars Relating to Marriage.

The intervention of a priest, or rather ecclesiastical functionary, was not deemed indispensable to a marriage, until the council of Trent in 1409. The celebrated decree passed in that session, interdicting any marriage otherwise than in the presence of the priest, and at least two witnesses. But before the time of Pope Innocent, III. (1118), there was no solemnization of marriage in the church, but the bridegroom came to the bride's house and led her home to his own, which was all the ceremony then used. Bands were first directed to be published by Canon Walter, in the year 1200.

New Flour Mill in Alabama.

The Dallas Gazette states that a flour mill has lately been established in the vicinity of Cahawba, which will turn out as good flour as can be procured in the Mobile Market. This fact may be doubted when it is understood that the latitude in which it is grown is but little more than 32°, but from our own knowledge we can state that wheat of the best quality is grown in that region, and that very good flour can be made; not equal of course to choice St, Louis, but of a quality similar to the common western brands.

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TO CORRESPONDENTS.

"A. C. B. of N. C."—An engine of 6 horse power would cost complete, boiler and all, seven hundred and fifty dollars—that is put on board a vessel here. We do not know the price of Munsell's Mortising machine for Hubs. The saws will cost forty-five dollars, with all the apparatus complete. The circular of 22 inch being the best for your purpose, witb its steel shaft and fly wheel and frame, would be $35 We could not understand what kind of boring instruments you wanted. We cannot recommend an inferior article because it is cheap.

"J. J. R of Mass"—You are right in regard to any amount of power worthy of attention, to be derived from smoke.

"R. W. of Mass."—We are positive that you have mechanics unsurpassed by those of any other place in the United States.

"A. T. P. of Ill"—Your principle is not new for propelling machinery by the arrangement of magnets. It yet remains to be discovered whether this power can be applied economically, or of sufficient force to propel machinery of any kind but that of a very light description.

"N. S. A. of Tenn."—Notes given in payment for a patent for a plough can be collected but no damages can be collected for infringement of patent until the patent is established in the U. S. District Court, or the Court of Equity.

"W. S. of R. I."—Your funds are duly received. All right now.

"C. E. G. of Ohio."—We feel very grateful for the interest you have taken to increase our list of subscribers in your place. The money sent is sufficient.

"P. T. W. of N. Y."—The using of steam first in a high pressure cylinder and then in a low pressure or condensing cylinder, is not new. If you will take the trouble to examine into the history of the steam engine you will find it so.

"S. McJ. of Ohio."—Sometimes a plan looks very well on paper, but it may work very indifferently.

"J. P J of Conn."—We have received your communication and will give it due attention.

"Mechanics' Mutual of South Troy."—We have received your communication and are much obliged to you for your kindness. We have always perceived the conduct of gentlemen in the members of No. 15 Your document is valuable as being the true and reliable corrector. The committee have not yet exerted themselves to rectify the mistakes.

To the Subscribers of the Mechanics' Journal.

The volume of this periodical will be completed in one number more, and a good opportunity will be presented to its patrons for subscribing to the Scientific American. Those mechanics who desire to keep up with the improvements of the age, will find the Scientific American to be the most valuable paper for intelligence relating to the welfare and employment of working men, in this or any other country. Those who have not yet paid for the Journal can now redeem their credit by paying up and extending their subscription.

Mechanics' Mutual.

A new Protection is about to be instituted in Albany. We hope that all these institutions will promote good will among mechanics and by lectures and discussions, not for mere controversy, but for investigating truth, spreading thereby knowledge among our mechanics during the coming winter. Without intelligence no good can be done, but with mutual confidence and intelligence every thing can be done. Let these qualifications then guide mechanics in Wisdom's ways.

Patent Agency.

Applications for Patents made at this office, on the most reasonable terms. Neat drawings, specifications, and engravings of the first character, and cheaper than anywhere else. Notices of new inventions, Agency for the sale of Patent Rights, and all business of that nature, promptly attended to. Those who have patent rights to dispose of will find a good opportunity and field for their sale—such as Horse Power Machines and Waterwheels of every description. The largest circulation in the world for advertisements of inventions, &c.

An Apology.

We owe our patrons an apology for not presenting them with the usual number of engravings in this week's paper, but are sure they will find the reading matter of sufficient interest to make up the deficiency in cuts.—The cause of this number not being as well embellished as former ones is on account of the sudden indisposition of our engraver.

The Springfield Gaz. says that Mr. Edward Smith late proprietor of the Cotton Factory at Ireland Parish, is held to answer on a charge of violating the statue concerning the employment of children in factories.

V. B. Palmer is duly authorized to receive Subscriptions and and a limited number of advertisements for the "Scientific American," in Philadelphia, Baltimore and Boston.

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To Mill Owners.

HAVILAND & TUTTLE'S Patent Centre Vent Pressur Water Wheel.—These wheels are now in successful operation in many towns in Maine, Massachusetts, and Rhode Island, and are found to surpass in power and facility of adaptation any water wheel now in use. This wheel was awarded the silver medal at the Fair of the American Institute recent-y held in New York and a diploma at the Mechanics' Fair in Boston.

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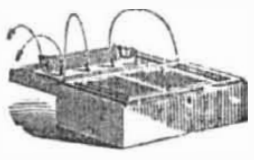
DROPSY, JAUNDICE AND CONTRACTION OF THE LEG.



Dr. Smith's Torpedo Magnetic Machine.

☞ The following is an extract of a letter from Sarah Sanger, No. 154 Delancey st.

New York, Aug 3, 1846.

I do hereby certify that I was grievously diseased with a dropsical swelling, jaundice, and contraction of my left leg, owing to a fall which wrenched my back, and the interior part adjoining. I called in two physicians, but my health still continued to sink rapidly away, so much so, that they could do no more for me. In this state, I heard of Dr. S B. Smith's Electro Magnetic Machine, and by the use of the machine about two months, I was restored to health. If my name can be of any service to Dr. Smith, he is very welcome to it, as I firmly believe had it not been for his machine, I should now have been in my grave.

SARAH SANGER, No. 154 Delancy st.

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WOOD CUTS.

☞ We would inform Newspaper and Periodical publishers that we have on hand a large lot of Wood Engravings, which have been used in the Scientific American during the past year, which we are desirous of disposing of CHEAP. They are in fine order and may be had at one fourth of their original cost Publishers of country papers would find it to their interest to avail themselves of this chance to illustrate their publications at a cheap rate.

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Office on F street opposite Patent Office.

He has the honor of referring, by permission, to Hon. Edmund Burke, Com. of Patents; Hon. H. L Ellsworth, late do; H. Knowles, Machinist, Patent Office; Judge Cranch, Washington, D. C.; Hon. R. Choate, Mass., U. S. Senate; Hon. W. Allen, Ohio, do; Hon. J. B Bowlin, M. C. Missouri, Hon. Willis Hall, New York; Hon. Robert Smith, M. C. Illinois; Hon. S. Breese, U. S. Senate; Hon. J. H. Relfe, M. C. Missouri; Capt. H. M. Shreve, Missouri. j23

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☞ Pictures taken at this establishment warranted to give satisfaction. j24

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☞ THIS IS THE MOTTO OF ALL THOSE THAT HAVE EXAMINED KNOX'S NEW FALL STYLE OF HATS, with a view of buying—

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THOMAS PROSSER, Patentee,
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To Dye Yellow Color.

There are but three colors in all nature, red, blue and yellow. All other supposed colors, are but combinations of these three, as we shall exhibit and prove as we go along in giving a number of practical receipts on Dyeing.

All goods to be dyed should be well cleansed, this is the true foundation of fine clear colors. To dye yellow on woolen goods, such as cloth, flannel or yarn. Quercitron bark, in quantity 4 oz. to the pound of yarn or flannel, should be scalded with boiling water in a clean vessel; the clear liquor should then be taken and put into a boiler with either a small quantity of alum, or nitro muriate of tin, and the goods boiled for half an hour in this. This process will also dye cotton Muriate of tin is the best mordaunt to use with the bark. It is necessary sometimes, especially for dark shades, to give two or three dips, airing the goods well each time.

Silk can be dyed a good yellow by this process, only it should not be boiled, but it is better for a fine rich color on silk, to pass the goods through a strong solution of the annatto of soda, then wash them and put them to steep in a weak solution of alum for about half an hour and then run them through a warm bath of Quercitron bark and a little muriate of tin. The muriate of tin is made by feeding muriatic acid with granulated tin until the acid will take up no more. The acid generally takes up one third of its weight of tin. Fustic will also dye a yellow with alum for a mordaunt, either on woolen or silk, but it makes a poor color in comparison with the Quercitron, (American yellow oak bark.) Turmeric can also dye a yellow, but it is very fugitive.—Straw weild makes a fine yellow on silk and it is very fast, but it is scarcely known now in the art of dyeing. The best yellow on cotton is dyed with sugar, or nitre of lead and the bichromate of potass. The goods should be handled for about twenty minutes in a solution of sugar (acetate) of lead, pressed out of that and then passed through a solution of ths *chrome*, then aired, passed through the lead and washed and dried. If the goods were dried out of the chrome, they would be full of dark reddish spots. The lead, or mordaunt for chrome colors, should always be about three times the weight of the chrome and 4 oz. of the crystals of the bichromate of potass (chrome,) will dye a very good yellow on cot ton. Yellow is one of the simple colors to form a green. Green is a compound color of blue and yellow.

From these receipts any person may dye a yellow color, if they are careful to handle their goods well, the which must be white for this color.

(Our readers will bear in mind that these receipts for coloring are prepared for the "Scientific American," by a practical man, and therefore can be relied on as correct.—Ed.

To Harden Steel Engravings without injuring the Impression.

Let the polished steel be suspended into a quantity of melted copper, and when the fusion has been raised to the tempering height suddenly plunge the melted copper, steel and all, into a vessel of water, so that the steel may not meet the air; in this manner its temper will be restored which was taken away for the purpose of cutting in making it soft by anointing it over with tallow, clay, or strewing hellebore on it, heating it and the quenching it in the juice, a little warm, of common beans. This is said to be the best way of softening and hardening steel, although some heat first, in the softening, and anoint after heating.

Patent Grease for Railway Axles.

Water 1 gallon, clean tallow, 3 lbs., palm oil 6 lbs., common sal soda ½ lb., (or tallow 8 lbs., and palm oil 10 lbs.,)—mixture to be heated to 210° and well stirred till it is down to about 70°.

Painting on Glass.

(*Concluded from our last.*)

The process must have been to melt side by side in the glass house a pot of plain and a pot of red glass; then the workmen, by dipding his rod first into the plain and then into the red glass pot, obtained a white lump of plain glass covered with a coating of red, which, by dexterous management in blowing and whirling, he extended into a plate, exhibiting on the surface a very thin stratum of the desired color. In this state the glass came into the hands of the glass-painter, and answers most of its purposes, except when the subject required the representation of white or other colors on a red ground; in this case it became necessary to employ a machine like the lapidary's wheel, partially to grind away the colored surface till the white substratum appeared.

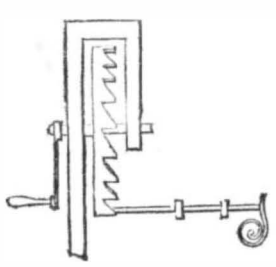
The material employed by the old glass-makers to tinge their glass red was the protoxide of copper, but on the discontinuance of the art of glass-printing, the dependant manufacture of red glass of course ceased, and all knowledge of the art become so entirely extinct, that the notion generally prevailed that the color in question was derived from gold. It is not a little remarkable that the knowledge of the coppered should have been so entirely lost, though printed receipts have always existed detailing the whole process. Baptista Porta (born about 1540) gives a receipt in his Magia Naturalis, noticing at the same time the difficulty of success. Several receipts are found in the compilations of Neri Merret and Kunckel, from whence they have been copied into our Encyclopaedias. None of these receipts, however, state to what purposes the red glass was applied, nor do they make any mention of flashing. The difficulty of the art consists in the prone ness of the copper to pass from the state of protoxide into that of peroxide, in which latter state it tinges glass green. In order to preserve it in the state of protoxide these receipts prescribe various deoxygenating substances to be stirred into the melted glass, such as Smith's clinkers, tartar. soot, rotten wood, and cinnibar.

One curious circumstance deserves to be noticed, which is, that glass containing copper when removed from the melting pot sometimes only exhibits a faint-greenish tinge yet in this state nothing more than simple exposure to a gentle heat is requisite to throw out a brilliant red. This change of color is very remarkable, as it is obvious that no change of oxygenation can possibly take place during the recuission.

The art of tinging glass by protoxide of copper and flashing it on crown glass, has of late years been revived by the Tyne Company of England, at Chiosy in France, and in Suabia in Germany, and in 1827 the Academy of Arts at Berlin gave a premium for an imperfect receipt To what extent do modern glass makers make use of these new glasses, we are ignorant; the specimens we have seen were so strongly colored as to be in parts almost opaque, but this is a defect, which might no doubt, be easily remedied.

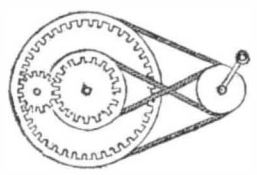
MECHANICAL MOVEMENTS.

Traverse Motion.



There are many ways in modifying motion, and the teachings of nature have suggested various modes of accomplishing different objects by the mechanical arrangement of machinery. The above cut represents one of the modifications of traverse motion, the horizontal bar being held to the ratchet wheel by a small spring on the right. Therefore, it will be easily observed that the motion of the ratchet wheel being circular there is also in combination with it by the motion of the crank a reciprocating motion of the bar and frame.

Changing Speed and Direction of Circular Motion.



Suppose the small pulley on the right to be the driver, the larger wheel with an internal rack and the eccentric wheel within will be driven in opposite directions by the bands represented in the cut, while at the same time motion will be imparted to the intermediate pinion on the left, both round its own centre, and also round the common centre of the circular rack and concentric wheel.

White Hard Spirit of Wine Varnish.

Put into a bottle five pounds of gum sundarac, and two gallons of spirits of wine, 60 over proof; agitate it until dissolved, recollecting, if washed glass is used, that it is convenient to dip the bottle containing the mixture into a boiler of hot water every ten minutes, the bottle to be immersed only two minutes at a time, which will greatly assist the dissolving of the gum; but be particular to keep a firm hold over the cork of the bottle, or else the rarefaction will blow the cork out with the force of a shot: and an accident might acrue from fire The bottle, every time it is heated, should be carried away from the fire the cork eased a little, to allow the rarified air to escape; then driven tight; and this process should be continued until all the gum is properly dissolved, which is easily known by having an empty tin can to pour the varnish into, until near the last, which is to be poured into a gallon measure; return the whole into the four gallon tin, if the gum is not at all dissolved, and continue the shaking until it is ready to be strained, when everything ready to be used ought to be quite clean and dry, as oily tins, funnels, &c., or anything damp, will spill and spoil the varnish. When it is strained off, put one quart of very pale turpentine varnish, shake and mix the two well together. Spirit varnishes should be kept well corked, and are fit to be used the day after being made.

Prussic Acid.

Prussic acid is the most powerful of all poisons. A single drop placed on the tongue of a dog caused his death in a few seconds. A professor at Vienna having prepared some in its most concentrated state, by way of experiment diffused some of it on his naked arm, and fell dead in a short time. These instances show the terrific effect which this substance has on the animal economy. They also show what extreme caution is necessary in preparing and using it. When much diluted, it has however, been employed as a medicine, in cases of consumption.

Although the investigations of chemistry have developed this substance, than which even lightning is scarcely more prompt or sure in destruction, still the wisdom of Omniscience has connected circumstances with its production and nature, which in a great measure, will prevent its employment for criminal purposes. The process by which it is made, requires more chemical skill than falls to the lot of unprincipled persons; and when obtained, its active properties are so evanescent, as never to remain more than a week or two, without peculiar treatment, and sometimes it becomes nearly inert in a few days — The odor, also, which is distinguished in animals destroyed by it, is often the sure means of detection.

The commencement of its decomposition is marked by the reddish color of the liquid, and in a short time after, it becomes black, and deposits a thick carbonaceous substance, at the same time it loses its peculiar smell, and emits that of ammonia. In this state, the Prussic acid has none of its former properties, but is entirely inert. The Prussic acid combined with potass is much used in the art of Dyeing. We shall treat of it in the Receipts we are publishing in that art.

There are 4201 letters lying in the Dead Letter Office, London, which contain property to the amount of $200,000.

Bread.

Bread, when just taken out of the oven, should never be eaten by persons of weak health, as it contains a great quantity of carbonic gas, which is given off as it cools and its place supplied with oxygen. This is the reason why people can eat a great deal more of new, than of old bread. The atmosphere is a source of food to man as well as vegetables, and the relationship of different kinds of food to the animal economy in connexion with the gases, ought to form a part of our studies.—Those who study domestic economy and use bread that has been cooled in an airy apartment are to be commended as much for consulting health, as for studying the way to make "the means meet the end." Any person is able to eat more new than old bread, and this simple fact is evidence that the stomach is no mean judge between quantity and quality.—Bread that is somewhat old can be refreshed by being steamed in a steamer or dipped in water and put in the oven, after which it should be cooled before using. The less yeast that is used to make bread, it will be found to be none the worse, although a little more labor is required to make it. In this lies the grand seeret of the difference in the quality of bread. The French pull all their dough, and make good bread, but the same effect can be produced by using little yeast, but working the dough a number of times.

Question for Consideratton.

Mr. Editor.

Seeing a sound extends as far as the air vibrates, why cannot messages be transmitted or spoken from city to city, through quarter inch block tin tubes (for sale at the hardware stores) laid three or four inches under ground in a furrow made by a plough, with mouth pieces attached at each end, cheaper, more durable, &c. &c., than the "Lightning Line" Think of it. Tinman.

The philosopher Demonax said of two dunces, that 'one appeared to be milking a he-goat while the other was holding a sieve for him.'

THE NEW YORK

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